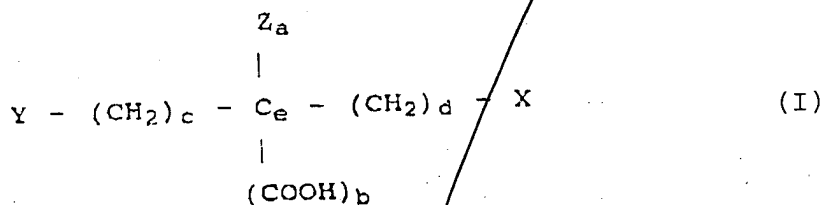


CLAIMS

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1. A copolymer comprising at least two identical or different monomers, the formula of the monomer being as follows (I):



in which:

- a) when X and Y are identical, and represent an acid, alcohol, amine or isocyanate group,

then at least two monomers have groups able to react with each other, and,

- at least one of the monomers has the following characteristics:

$$a \geq 1$$

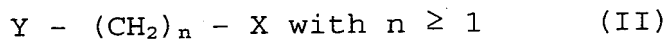
$$b \geq 1$$

$$c + d \geq 0$$

$$e \geq 1$$

and Z can be OH, COOH, an alkyl having 1 to 18 carbon atoms, or any other non-reactive group present during the polymerisation process,

the other monomers being of the same type or of the following formula (II):



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b) when X and Y are different and represent, independently of each other, an acid, alcohol, amine or isocyanate group,

10 then at least one monomer comprises groups able to react with each other, and

at least one of the monomers has the following characteristics:

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$$a \geq 1$$

$$b \geq 1$$

$$c + d \geq 0$$

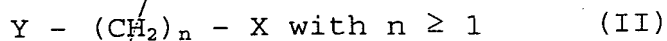
$$e \geq 1$$

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and Z can be OH, COOH, an alkyl having 1 to 18 carbon atoms, or any other non-reactive group present during the polymerisation process,

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the other monomers being of the same type or of the following formula (II):



5 c) at least one monomer of each type when X and Y are identical or different, as defined previously, are combined so that the stoichiometry of the ratio X / Y, calculated so as to obtain a given molar mass and given extremities, permits an elongation of the carbon-containing chain.

10 2. A copolymer according to Claim 1, characterised in that one of the monomers is citric acid.

15 3. A composition comprising at least one copolymer as defined according to one of Claims 1 or 2 and at least one ion chosen from amongst Na^+ , Li^{++} , Ca^{++} , Mg^{++} , Zn^{++} and/or at least one oxide chosen from amongst magnesium oxide, zinc oxide or silicon dioxide so as to strengthen the internal structure of the polymer and thus give a thermoreversible composition.

20 4. A composition according to Claim 3, characterised in that it also comprises gluten and/or starch.

25 5. A composition comprising at least one copolymer as defined according to one of Claims 1 or 2, gluten and/or starch.

30 6. A composition according to one of Claims 3 to 5, characterised in that the copolymer is present in a quantity ranging from 50 to 100% by weight with respect to the total weight of the composition, and preferably 60 to 90%.

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7. A composition according to one of Claims 4 or 5, characterised in that the starch and/or gluten is present in a quantity ranging from 0 to 50% by weight, preferably 10 to 40% by weight and even more preferentially 20 to 35% by weight with respect to the total weight of the composition.

8. A composition according to one of Claims 3 to 5, characterised in that it also comprises at least one additive chosen from amongst colorants, mineral fillers such as titanium oxide, calcium carbonate, pigments, antioxidants, anti-ultraviolet agents and mixtures thereof.

9. The use of the copolymer as defined according to one of Claims 1 or 2 as an adhesive.

10. The use of the copolymer as defined according to one of Claims 1 or 2 as a printing ink.

11. The use of the composition as defined according to one of Claims 3 to 10 as an adhesive.

12. The use according to Claim 11, characterised in that the copolymer has a degree of polymerisation ranging from approximately 5 to 25.

13. The use of the composition as defined according to one of Claims 3 to 10 as a printing ink.

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14. The use according to Claim 13, characterised in that the copolymer has a degree of polymerisation ranging from approximately 3 to 20.

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15. A smart card or the like having a support body comprising the copolymer as defined according to one of Claims 1 or 2.

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16. An electronic label having a support comprising the copolymer as defined according to one of Claims 1 or 2.

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17. A printable support sheet including the copolymer as defined according to one of Claims 1 or 2.

18. A toy comprising the copolymer as defined according to one of Claims 1 or 2.

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